

**SOFTWARE TOOL FOR GENERATION  
OF SCATTERING PARAMETER MODELS OF N-PORT  
LUMPED ELEMENT CIRCUITS FOR USE IN SPICE SIMULATORS**

**ABSTRACT OF THE DISCLOSURE**

A method and apparatus for simulating an electronic circuit having a plurality of ports uses a digital processor to identify signal transmission characteristics associated with each of the ports. A plurality of test frequencies are selected with which to measure frequency response of the electronic circuit at each of the ports. For each of the test frequencies, a signal characteristic is identified at each of the ports in response to a sequential application of each of said test frequencies to each port. Scattering parameters corresponding to each port are extracted for each frequency based on the signal characteristics. These scattering parameters are then transformed into a time domain representation of the electronic circuit.